

Miscellaneous.

REPORT ON IRON FURNACES.—The report of Dr. Lyon Playfair and Professor Bunsen, of Marburg, on the conditions and products of iron furnaces, called for by the British Association, is said to be of the greatest commercial value to the prospects of our highly important iron manufactures, and at the same time full of interest to chemical science in some of the views which it develops. On the one hand it exhibits an entirely new theory of the reduction of iron from the ore by cyanogen gas as the chief agent; and, on the other, it shows that, in addition to a vast saving of fuel, about 2 cwt. of sul-ammoniac may daily be collected at the single establishment at Alfreton, where the experiments were made; thus leading us to infer that, in the iron furnaces of Britain, there may be obtained, from vapour which now passes away, an enormous quantity of this valuable substance, which would materially lessen the dependence of our agriculturists on foreign guano, a purpose, by the way, which is also at the present moment held forth in prospect as an advantage derivable from another proposed improvement in chemical practice, though it can scarcely be also called another new discovery in chemical science; namely, the proposed condensation of sewage into solid manure, as noticed below.

CONDENSATION OF SEWAGE INTO SOLID MANURE.—An explanatory lecture was delivered in our hearing at the Westminster Literary and Scientific Institution, on Friday last, by the patentee, Mr. William Higgin, who proved, clearly enough, the possibility of condensing, in a solid form, all that is valuable as manure in the sewage of towns, by collecting it in tanks, wherein all that is solid and insoluble, or merely suspended in the fluid, would, of course, subside, while by aid of calcareous or other reagents, the soluble phosphates, or phosphoric acid, &c., might be converted into insoluble salts, and precipitated amongst the general sediment, or apart from it; and the ammoniacal and hydro-sulphuric vapours, uniting in hydro-sulphuret of ammonia, be also condensed, by aid of chlorine, in covered air-tight areas above the tanks, and added, in form of sulphuric acid and sulphur, to the other valuable materials; the residual water of the sewage thus, in effect, being rendered perfectly pure before it issues into the river that may flow in the vicinity of the town. Into the question of the profitable and practicable adoption, or the relative merits, of such an economical and save-all system, it is not our province to enter; but we may remark, that certainly the health of towns could not but be vastly benefited by the absorption and solidification of the volatile and unwholesome vapours hitherto permitted to emanate from sewers, and even by the purification of the rivers, on the banks of which the habitations of man are so frequently constructed.

PLANS FOR LAYING OUT THE JEPHSON GARDENS.—Relative to a letter on this subject in our paper of the 19th ultimo, a correspondent says, that none of the plans submitted were equal to what was desired (we should have wondered if they had been).—The plan selected as No. 1, the writer says, "was subsequently considered impracticable, and none of the others meeting with approval, the committee exercised a right they have, in attempting to procure what they consider more suitable, and invited Mr. Jackson and Mr. Squirehill to furnish designs for two lodges and other buildings, with full detail drawings, specifications, &c., and for which they are each to be remunerated by the sum of forty-two shillings, the designs to become the property of the committee." This is the "job" complained of by "one interested in the prosperity of Leamington." The result of competitions conducted as they now usually are, is every day less satisfactory, or we should rather say, more satisfactory to those who desire to see an alteration of the system. We have before us the particulars of a recent competition in Kensington and proceedings now going on there, which promise to be very instructive.

FALL OF A HOUSE IN OLD JEWRY.—Early on Saturday morning last, a party-wall and part of a large five-storied house fell, at the corner of Gresham street, in consequence of the removal of an adjoining house. The only occupants, two females, escaped in their night clothes.

EFFECT OF PAVEMENTS UPON HEALTH.—The causes of disease, which are being investigated so extensively at the present time, are sometimes traced to the most remote origin. It would enter the minds of few that pavements, which are constructed merely for the convenience of transit in crowded cities, are preventives to ill-health; but such has recently been proved. The corporation of Liverpool having recently paved the courts and alleys of that town, it has been observed that the health of the people residing in them has wonderfully improved, and that deaths were less frequent. This led to further inquiry, and attention was directed to six of the worst courts in Liverpool. Of them, Mr. Carr of the southern dispensary remarks, that they were formerly so notoriously unhealthy, that the medical attendant was hardly ever out of them, and when any epidemics visited the town, these places exhibited their results in perfection; the surface being in a most disgraceful state, covered to some depth with putrid mud, so that the inhabitants were compelled to place large stones at intervals, to enable them to reach their houses by stepping from one to another. It is also stated by Mr. Samuel Holme that, in Freemason's row, he found, about two years ago, a court of houses, the floors of which were below the public street, and the area of the whole court was a floating mass of putrid animal and vegetable matter, so dreadfully offensive that he was obliged to make a precipitate retreat; yet the whole of the houses were inhabited! Since these sinks of insalubrity have been paved, the change in the health of the inhabitants has been even more remarkable than what may have been anticipated. In one place (Bridport-court), which contains eighteen houses, the cases of sickness were eighteen before to four after the flags were laid down. In another alley (Oak-court), the proportion is five cases now to twenty-eight in former years; and, so far as observation has been extended, which it has been to fifty-seven of the houses, the fronts of which have been paved, to eighty-five cases of sickness which occurred before paving, only sixteen have taken place since.—*Chambers' Journal.*

CONTRACTS FOR IRON.—At a meeting of the directors of the Birmingham, Wolverhampton, and Stowe Valley Railway, held at Birmingham in the latter part of the month just past, for receiving tenders, about twenty for chairs, and ten for rails, were sent in (varying considerably in prices), and from which the following were selected:—W. Sparrow, Bilston Works, 3,300 tons of rails and 1,000 tons of chairs; Lord Ward, 1,000 tons of chairs; and Messrs. Bradley and Co., Bradley Works, for 2,000 tons of rails. The meeting having been private, the prices could not be exactly given, but the rails, it is understood, were, on the whole, let for under 10*l.* per ton, the chairs for 7*l.* per ton; and, considering the number of railway projects on hand, and consequent demand for iron, the directors were of opinion that the contracts were effected on advantageous terms. The whole of the iron is to be supplied before the end of next year, and every possible effort will be made by the directors to forward the works.—A contract for 20,000 tons of iron was also adjudged about the same time to Sir John Guest, price 10*l.* a ton.

RAILWAY METROPOLITAN TERMINI.—The *Observer* says, "The novel sight will soon be witnessed of many hundreds of men employed in the very heart of London in the construction of a railway. The London and South-Western Company have now got possession of nearly all the property necessary for the extension of their line to Hungerford Bridge, and the most active preparations are making for commencing the construction of the works without delay. There will be a magnificent station at Hungerford Bridge. The extent and style of the erection may be inferred from the fact that its cost will exceed 100,000*l.* The expenses of constructing the extension line from Nine Elms to Hungerford Bridge, including the purchase of property, will not, it is supposed, be under 600,000*l.*, making, with the station, 700,000*l.*, or the enormous sum of 350,000*l.* per mile.

PADDINGTON HOSPITAL.—A munificent lady has lately bequeathed 1,000*l.* to the new hospital. We hope this will put a little fresh life into the undertaking, and lead to something like work in earnest.

PRELIMINARY COSTS OF RAILWAYS.—Welsh Midland & Shrewsbury Railway. It will perhaps interest some of our readers to know, as the Welsh Midland Company are just winding up their affairs, that the cost per mile of the engineering, surveying, and legal expenses of that company was near 1,100*l.* per mile, while the Shrewsbury and Hereford cost only 500*l.* per mile. The former, as is well known, failed to pass the ordeal of the Standing Orders Committee, in consequence of grievous errors in the plans, &c.; while the latter company, notwithstanding the strenuous opposition of the Great Western Railway Company, and a few landed proprietors, have succeeded with their bill, and are now making preparations to proceed with their works. The engineers to the former were Messrs. Stephenson, Gibbs, Sherrard, and Hall; to the latter, Messrs. Robertson and Baylis.

EFFECTS OF BAD VENTILATION.—In a report on the sickness among the Edinburgh Police, recently drawn up by Dr. Tait, the effect, upon the health, of an ill-ventilated section-house is noticed, and furnishes an additional example of the importance of pure air, and plenty of it. The men boarded in this house were the heartiest and youngest in the force, yet the ratio of sickness among the men out of the section house was 205.59, and amongst those in it 351.35, being a difference in favour of the former of 145.76. Out of the 37 men boarded in it, only one was found free from functional disorder, the prominent symptoms of which were great sensibility to cold, copious cold perspirations, constant sense of fatigue, pain in the eyeballs, and loss of appetite. Statistics will at last force upon us sound convictions. The progress of knowledge is slow and not unobstructed.

NOTICES OF CONTRACTS.

[We are compelled, by the interference of the Stamp Office, to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent Garden.]

For the works necessary in extending sewers in Devonshire-street, about 750 feet.

For the works necessary in extending sewers along White-chapel-road, about 390 feet.

For the works necessary in extending sewers along Union-street, about 215 feet.

For the works necessary in extending sewers in Commercial-road, about 675 feet.

For the works necessary in extending sewers in Plummer's-row, about 750 feet.

For the whole works on two portions of the Glasgow, Dumfries, and Carlisle Railway: divided into several contracts.

For the supply of 400 tons of Kentish ragstone, broken to regular sizes, not exceeding two inches square, for the parish of St. John, at Hackney.

For 500 tons of best blue Guernsey granite chipping, for the Hackney Union.

For the execution of the works on the Newbury, Warrenpoint, and Rostrevor Railway, from near Newry to near Rostrevor,—a length of about 5 miles, and for repairing same for one year.

For the construction of the East Riding branch of the York and North Midland Railway, from York to Market-Weighton, a length of 31 miles, or thereabouts.

For the construction of the various stations, buildings, or other works between York and Market-Weighton, on the branch line of the York and North Midland Railway.

For supplying and laying cast-iron water-pipes, cocks, and other castings for the service of the Plymouth Water Works (promptly).

For carpenter's work to be done at the Bury St. Edmund's Gaol and House of Correction.

For plumber's, glazier's, and painter's work, to be done at the Bury Gaol.

For making a cylindrical sewer in Regent-street, Cambridge.

For supply of a condensing steam-engine of 6 to 8-horse power, at Reading.

For the construction of a reservoir and filter-beds, for the water works at Warrington, including all earthwork, masonry, stoning, diversions of roads and water-courses, &c. (promptly).

For the completion of the works of the Borough Gaol at Birmingham, and the supply of the necessary materials and labour for that purpose.

For the repair of the Yeovil turnpike-road (a length of 20 miles), for three years.

For making and laying the Newry and Enniskillen Railway, from Lisnak to Drumcree, a length of 5 miles, with all excavations, embankments, bridges, culverts, gates, fences, roads, &c., and for repairing the same for one year.

For making turn-tables and other machinery for railway carriages and waggons for the Dublin and Belfast Junction and Navan Branch Railway.

For the building of all the stations and gate-keepers' houses on the Newcastle and Berwick Line of Railway.

For about fifty yards of pump trees, 6 to 9 inches in diameter, also for tram rails, at Willenhall.

For the building of the stone wall to surround the proposed Church of England Cemetery at Watstone.

For taking down and reconstructing Loose-bridge, Cornwall (further tenders wanted).

For 3,500 tons of malleable iron railway bars for the East and West Yorkshire Junction Railway.

For about 1,300 tons of cast-iron railway chairs for the East and West Yorkshire Junction Railway.